

GUTTER COVER

BACKGROUND OF THE INVENTION

1. FIELD OF THE INVENTION

[1000] This invention is directed toward a gutter cover.

2. DESCRIPTION OF THE RELATED ART

[1001] Gutter covers are used to cover gutters on buildings to prevent the gutters filling up with leaves and other debris that collects on roofs and is washed by rains into the gutter. The covers are meant to collect the debris, preventing it from entering the gutter and direct it off the gutter onto the ground while allowing water to enter the gutter relatively clean.

[1002] Known gutter covers are however difficult to install. The covers often require fasteners to securely install them and installing the covers with fasteners while on a ladder is difficult. Examples of covers using fasteners are shown in US Pat. 6,047,502 and U.S. Appl. Ser. No. 2002/01666290 by way of example. Gutter covers are known that employ a close fit over the outer lip of a gutter and thus eliminate the need for fasteners. These covers however usually need insertion of the other side of the cover under the bottom edge of the shingles on the roof of the building carrying the gutter. Again mounting of the cover is difficult to do, requiring as it does the friction fit of one side of the cover over the outer lip on the gutter and simultaneous insertion of the other side of the cover under the shingles. The mounting is difficult to do while on a ladder and further, can lead to damage to the roof shingle edge of the building. Examples of gutter covers mounted on gutters with a tight fit on the outer lip of a gutter on one side and under the edge of shingles on a building on the other side are shown in US Pats. 5,555,680 and 6,453,700 by way of example.

SUMMARY OF THE INVENTION

[1003] It is the purpose of the present invention to provide

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a gutter cover that is easy to install and remove, without damaging the building, and that is simple and inexpensive to manufacture.

[1004] In accordance with the present invention, the gutter cover is provided with structure defining a channel opening outwardly on one side of the cover, the channel sized to snugly receive the upper lip of a gutter. The channel is constructed with a long upper arm and a shorter bottom arm allowing the upper arm to initially rest on the gutter lip with the bottom arm adjacent the bottom of the lip. The cover has a gripping surface on the channel side of the cover accessible from above the cover, the gripping surface facing away from the channel opening. The gripping surface provides a finger grip allowing the installer to grip the surface with his fingers and to pull the cover toward him from its initial position moving the channel over the gutter lip. The other side of the cover carries a flexible flap which can abut the other side of the gutter or the building without damaging the building.

[1005] The invention is particularly directed toward a gutter cover having a main elongated portion and an outer side portion on one side of the main portion. The main portion comprises a perforated panel. The outer side portion defines a channel that opens away from the main portion, the channel sized to fit over the upper lip of a gutter. The cover has a gripping surface on or near the outer side portion, and extending up from the cover. The gripping surface faces away from the channel opening. The gripping surface is used to pull the channel over the lip of an installed gutter when installing the cover on the gutter.

[1006] The cover includes an inner side portion on the other side of the main portion, the inner side portion parallel to the outer side portion and defining a slot that opens away from the main portion. A flexible flap is mounted in the slot and extends away from the main portion;

[1007] The channel is defined by a top wall, a bottom wall and an end wall joining the top and bottom walls, with the bottom wall aligned with panel. The end wall provides the gripping surface

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BRIEF DESCRIPTION OF THE DRAWINGS

[1008] Fig. 1 is a cross-section view of a gutter mounted on the side of a building;

[1009] Fig. 2 is a cross-section, exploded view of the gutter cover of this invention;

[1010] Fig. 3 shows the initial placement of the cover on the gutter during installation;

[1011] Fig. 4 shows the cover installed;

[1012] Fig. 5 shows a cross-section view of another embodiment of the cover; and

[1013] Fig. 6 is a cross-section of a cover made from metal.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[1014] The gutter 1, shown in Fig. 1, is installed on the side wall 3 of a building 5. It can also be installed on the end of the soffit of the building. In either case it is just under the outer top edge 7 of the roof 9 of the building 5. The gutter 1 normally has an inner vertical wall 11 against the side of the building and an outer, generally vertical, outwardly curved, wall 13. The inner and outer walls 11, 13 are joined by a bottom wall 15. The top of the outer wall 13 is bent to form a relatively short vertical wall section 17, a relatively short, inwardly directed, top horizontal wall section 19 and a downwardly and outwardly curved wall section 21, all three wall sections forming the top, outer lip 23 of the gutter.

[1015] The description will make reference to 'top' and 'bottom'; 'downwardly' and 'upwardly'; 'inner' and 'outer' and 'inwardly' and 'outwardly'. These terms are used as a position reference only when looking at the gutter and cover when they are installed on a building.

[1016] The gutter 1 can be mounted on the building 5 by means of brackets 27. The brackets 27 are longitudinally spaced along the gutter. Each bracket 27 can have an elongated main body 29 with an upwardly-extending, folded, inner support 31 at one end, the support extending transverse to the body 29, and an upwardly and inwardly bent outer support 33 at the other end. The inner

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support 31 has an upwardly extending outer arm 35 folded up from the body 29 and a downwardly extending inner arm 37 folded down from the top of the upwardly extending arm 35. The downwardly extending inner arm 37 extends below the body 29 and the two arms 35, 37 form a narrow slot 39 between them that opens downwardly. The brackets 27 are fastened to the building wall 3 with the inner arm 37 against the side 3 of the building 5, the fasteners (not shown) passing through the inner arm into the building. The top of the inner side 11 of the gutter 1 is inserted into up into the slots 39 of the brackets 27 to locate the gutter, and the inner side 11 is fastened to the building by fasteners (not shown) located between the brackets 27. The outer support 33 is shaped to fit within the outer lip 23 of the gutter to support the outer side of the gutter 1.

[1017] While brackets have been described for mounting the gutter to a building, other known mounting means can be employed. For example, long spikes can be driven through both the outer and inner walls of the gutter and into the building to mount the gutter on the building, The spikes pass just below the gutter lip, and are generally horizontal. The spikes are longitudinally spaced on the gutter, similar to the brackets. Tubular spacers are usually provided on the spikes, extending between the inner and outer walls of the gutter, to help the gutter retain its shape while the spikes are driven in. The spikes could be replaced by long screws.

[1018] The gutter cover 41 of the present invention, as shown in Fig. 2, has a central main section 43 with inner and outer side sections 45, 47, one on each side of the main section 43. The main section 43 is defined by an elongated, rectangular panel 49 having parallel side edges 51, 53. The panel 49 has perforations (not shown) therein sufficient in number, size and location to pass water flowing off the edge of the roof into the gutter without passing large debris. The perforations are usually circular in shape but could have any shape. The cover 41 is generally sized to close the top of the gutter

[1019] The inner side section 45 of the cover defines a

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relatively short, narrow slot 53 opening inwardly away from the main section 43. A narrow flexible strip 55 is provided to be mounted in the slot 53, as shown by arrow 'A', along one edge 57, the strip 55 extending inwardly away from the side section 45 when mounted therein. One wall 59 defining the slot 53 can be dimpled inwardly at spaced locations to hold the strip 55 in the slot 53. The strip 55 extends away from the side section 45 of the cover to bear against the building 5. The slot 53 is preferably angled slightly upwardly at an angle ranging between about twenty and thirty degrees. This allows the flexible strip 55 to bend into the building to ensure better sealing contact.

[1020] The outer side section 47 defines a relatively short elongated channel 65. The channel 65 opens outwardly away from the main section 43. The channel 65 is more specifically defined by a relatively wide top wall 67, a narrower bottom wall 69 that is parallel to the top wall 67, and an end wall 71 that joins the inner ends of the top and bottom walls 67, 69, the end wall 71 being transverse to the top and bottom walls and attached to the main section 43. The bottom wall is aligned with the panel 49. The end wall 71 extends upwardly from the panel 49 and provides a gripping surface 73 that faces away from the channel opening. Preferably, the bottom wall 69 has retaining means 75 adjacent its free side 77. The retaining means 75 can comprise a raised ridge 79 formed in the bottom wall 69. The channel 65 has a depth 'D' between the top and bottom walls 67, 69 that is generally equal to, or just slightly greater than, the depth 'd' of the lip 29 on the gutter.

[1021] In use, the cover 41 is first loosely mounted on top of the gutter 1, as shown in Fig. 3 with its inner side section 45 resting on the support brackets 27 and the outer end of the top wall 67 of the channel 65 resting on the top of the gutter lip 23 on the horizontal top wall section 19 of the lip. In this position, the gripping surface 73 on the end wall 71 is opposite the curved end 21 of the lip and the bottom wall 69 is just even or slightly below the bottom of the curved end 21 and just inwardly of it as shown in Fig. 3. The installer now grips the

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surface 73 with his fingers while his thumbs rest against the vertical wall section 17 of the lip and then draws his fingers outwardly toward his thumbs, as shown by the arrow 'B', sliding the end wall 71 outwardly against the curved end 21 of the lip to place the curved end 21 and the majority of the top wall section 19 of the lip 23 within the channel 65 as shown in Fig. 4. The ridge 79 is cammed down as the bottom wall 69 slides outwardly by the bottom of the curved wall section 21 and then moves upwardly as it passes outwardly of the end of the curved wall section 21 to help retain the lip 23 in the channel 65.

[1022] The position of the end wall 71, when the cover 1 is initially placed on the top of the gutter with the outer part of the top wall 67 on top of the lip 29 and the outer side of the bottom wall 69 of the channel just inwardly of the curved wall section 21, allows easy mounting of the channel 65 onto the lip 29 by merely pushing on the gripping surface 73 formed by the end wall 71 to slide the cover outwardly. The cover can be easily removed by grasping the flap 55 of the cover and pulling it upwardly to rotate the outer section 45 of the cover about, and then off, the gutter lip 23.

[1023] It will be seen that the end wall 71 forms a gripping surface by means of which the channel on the cover can be pulled onto the lip of the gutter. This gripping surface can take other forms. The gripping surface can be formed by a short wall extending up from the cover at or near the channel, the short wall separate from the channel. In this embodiment the channel can be above, below, or at any in-between position relative to the panel of the main section of the cover.

[1024] An example of a cover 41' with another gripping surface is shown in Fig. 5. In this figure the channel 65' is below the plane of the panel 49' with the top wall 67' of the channel 65' in the plane of the panel 49'. The end wall 71' extends downwardly and the bottom wall 69' extends forwardly from the bottom of the end wall 71' parallel to the top wall 67', the bottom wall being shorter than the top wall. The top wall 67' of the channel 65' can have an abutment wall 77 extending up from the

top wall just outwardly from the end wall 71'. The abutment wall 77 provides a gripping surface 79 above the panel 49', the gripping surface facing inwardly away from the mouth of the channel 65'. The gripping surface 79 can be grasped by the fingers to pull the channel 65' on the cover over the gutter lip. While the abutment wall 77 is shown mounted on the top wall 67' of the channel, it could also be mounted on the panel 49' adjacent or near the channel. The abutment wall 77 can be continuous or discontinuous

[1025] In the embodiments described and shown, the top wall defining the channel is longer than the bottom wall allowing the outer end of the cover to be initially positioned on the top of the gutter lip with the top wall of the channel on the top wall section of the lip and with the bottom wall of the channel adjacent the lip and aligned generally with the bottom of the lip. This aligns the mouth of the channel with the lip as shown in Fig. 3. However, in some embodiments, the support means for the gutter, whether in the form of brackets, mounting spikes, or other means may be located just below the bottom of the gutter lip. Thus the initial positioning of the cover on the gutter may have the outer end of the cover supported on the support means instead of on the gutter lip. In this position the mouth of the channel is still initially aligned with the lip and just inwardly of it. In this case the top and bottom walls defining the channel can be the same length since the top wall is no longer needed to position the cover relative to the gutter lip.

[1026] The cover described can be made from molded or extruded plastic material. Preferably the cover is made from suitable metallic material such as aluminum. The metal cover can be formed by folding a sheet of metal to form the slot and channel. As shown in Fig. 6 the slot 53" in the inner side section 45" can be formed by bending a narrow strip on the inner side of the panel 49" first upwardly slightly at bend 81, then bending the strip 180 degrees at bend 83 onto itself to form a top leg 85 and a middle leg 87 adjacent each other, then bending the strip adjacent bend 81 inwardly and upwardly at bend 89 to form a bottom

leg 91 parallel to, but spaced from middle leg 87, forming slot 53". The top and middle legs 85, 87 form the top wall of the slot and the bottom leg 91 forms the bottom wall of the slot.

[1027] The channel 65" in the outer side section 47" can be formed by a narrow strip, forming an extension on the other side of panel 49" being first bent upwardly from panel 49" at a ninety degree bend 93, then being bent ninety degrees outwardly at bend 95 to form inner end wall leg 97, then being bent back on itself at bend 99 to form outer top wall leg 101, bent downwardly at ninety degrees at bend 103, adjacent bend 95, to form inner top wall leg 105 and bent one last time at bend 107 outwardly, adjacent bend 93, to form outer end wall leg 109 and bottom wall leg 111. Legs 101 and 105 form the top wall of the channel; leg 111 forms the bottom wall of the channel; and legs 97, 109 form the end wall of the channel. While one sequence of bending a sheet into the cover has been described other sequences can be used. For example, the slot can be formed by first bending the strip extending from the panel slightly upwardly and then bending it back on top of itself to first form a doubled bottom wall of the slot.

[1028] All the embodiments described have a cover with an inner and outer section, one on each side of the main panel. However, the cover could be made with only a main panel and an outer section, the inner side of the main panel resting on the brackets or other supports adjacent the inner wall of the gutter. This cover uses no flexible flap. The use of a flexible flap is preferred however since it allows the cover to be used with gutters of slightly different width.

[1029] The cover is preferably made from aluminum. The aluminum is usually painted to provide colors that could match the coloring on the rest of the house. However painted aluminum quickly becomes discoloured. In accordance with this invention the cover is coated after painting with a clear protective coat of material such as a polyester. The coating can for example be a polyester coating material under the name of 'Keltex' manufactured by Kelcoating in London, Ontario. The protective coat prevents the

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painted aluminum from becoming discoloured.

[1030] As is apparent from the description, applicant's cover is very easy to install and is relatively easy and cheap to manufacture. The cover does employ a gripping surface on the top of the cover that extends upwardly. This surface may prevent some of the smaller debris from moving off the cover. However the gripping surface need not be too high to be effective, and most large debris, such as leaves, are easily blown off the cover.